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SUGGESTIONS FOR THE TEACHING OF GEOGRAPHY IN INDIA

BY

E. A. MACNEE, M.A., F.R.G.S.

UNIVERSITY OF LONDON DIPLOMA IN GEOGRAPHY

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PREFACE

This little book has been written, first, to help teachers in Indian Secondary Schools to understand the scope and appreciate the value of Geography and, secondly, to give them some practical assistance in teaching the subject.

I have derived inspiration from a large number of books, the names of which I have endeavoured to include in the appendix. I am specially indebted to the works of Dr L. D. Stamp, to *Geography in School* by J. Fairgrieve and to *The Scope of School Geography* by R. N. R. Brown, O. J. R. Howarth and J. McFarlane.

E. A. M.

NOTE TO SECOND EDITION

In this edition no change has been made in the author's text, but the Bibliography has been brought up to date by Mrs G. E. Scarfe.

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ILLUSTRATIONS

I

DEFINITION AND FUNCTION

GEOGRAPHY means literally a description of the earth. But 'the world is so full of a number of things' that it would be hopeless to attempt to describe every part of the earth in detail. What then are we to describe and what may we safely omit? We must have some principle to guide us. The principle suggests itself when we consider why we study the earth. We study it chiefly because we live on it. So, to give a more explicit definition, geography is the study of the earth as the home of man; or, in other words, geography is the study of the physical environment of man, particularly in its relation to human activities.

All parts of the earth's surface are not equally important for human beings. A description of the densely populated Nile valley, for example, is of much greater human interest than a description of an equal area in the centre of the Sahara Desert. Similarly, a description of the British Isles is more important than a description of sparsely populated Labrador in the same latitude. The factors in our physical environment which have a definite influence on human life are more important in

geography than those which have little or no influence.

Barker in *Geography in Education and Citizenship* favours the definition of geography as the adjustment of human groups to their physical environment. The definition is valuable because it emphasizes the human side of geography and the influence of the physical environment on human life. If not fully understood, however, it seems rather to convey the impression that the whole of man's physical environment is fixed and unalterable and that man has to adapt himself to it as best as he can.

Now it is perfectly true that the physical environment has a great effect on human life. In hot and wet plains, for example, men grow rice for food and along sea coasts they catch fish. But this is not the whole truth. The converse is also true. In many parts of the world man has had a considerable effect on his environment. By digging canals he has converted deserts into fruitful fields and he has covered thousands of square miles of the earth's surface with houses, roads, railways and factories. Perhaps, then, we can best define geography as a study of the interaction between man and his environment. We study man and the place he lives in and the relations between the two.

The function of geography teaching in school

is well stated by Fairgrieve in *Geography in School.* 'The function of geography is to train future citizens to imagine accurately the conditions of the great world stage and so to help them to think sanely about political and social problems in the world around.' In these democratic days every man should think out political problems for himself and not blindly follow the demagogues who shout the loudest. Similarly every man should be able to form intelligent opinions for himself about social problems and not accept customs as perfect merely because they have been handed down from past generations.

To understand the function of geography more clearly, let us imagine a man who has never left his native village and has never heard or read about the world outside his village. Could such a man with his limited mental horizon be expected to hold sensible views about questions affecting the whole of India ? If he visited other villages and towns in his neighbourhood, his outlook would be broadened ; if he travelled to different parts of India it would be broader still ; if he travelled to other countries outside India, it would be still broader. But all men are not in a position to travel widely and no one can travel to every part of the world. This is where geography comes in and performs a valuable function. If we cannot ourselves go and see other parts of the

world, we can at any rate inform ourselves about them from books, pictures and descriptions.

Travel is a great educator. Geography enables those who cannot themselves travel everywhere to visualize conditions existing in different parts of the world. Just as travel broadens the outlook, so does a study of geography. But a word of warning is necessary. Travellers obtain varying degrees of benefit from their travels according to the amount of attention they pay to their surroundings and the intelligence with which they draw inferences from their observations. So also the benefits to be derived from a study of geography depend largely on the way in which it is studied.

II

Physical Factors

Most subjects of the school curriculum can be classed as either scientific or human. Physics, chemistry and mathematics are examples of sciences: history and languages of human subjects. Geography has a unique place, being both a scientific and a human subject. On the scientific side geography is related to both physical and biological sciences, the chief physical sciences to which it is related being astronomy, meteorology, geology and oceanography. It is not possible in a single chapter to deal exhaustively with this relation, but an attempt is made below to indicate some of the main topics that are common to geography and the physical sciences and to give some hints for teaching them. Many of the topics can best be taught with the aid of diagrams.

Astronomy studies the heavenly bodies, of which the earth is one. The form and movements of the earth, the inclination of its axis, day and night, the seasons, latitude and longitude, time—these are parts of the science of astronomy

and also an integral part of geography. In teaching the astronomical part of geography a good globe is essential and an orrery desirable. A good lesson on day and night can be given by reflecting sunlight from a mirror outside the classroom on to a globe inside. A lesson on the seasons can be illustrated by making a lamp represent the sun and a globe the earth. Elementary ideas about latitude and longitude can be given by asking pupils to describe the position of a point on an ordinary blackboard and then that of a point on a squared blackboard. They will find it much easier to locate a point on the squared blackboard. The horizontal lines on the squared blackboard may be compared to lines of latitude and the vertical lines to lines of longitude.

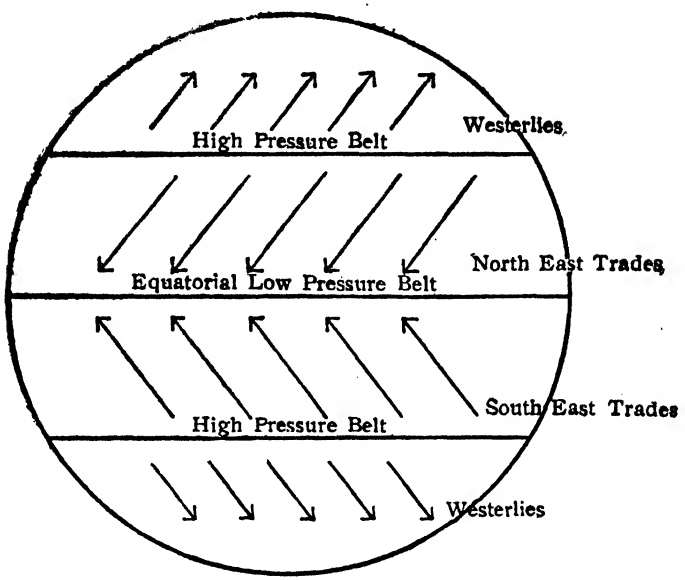
Meteorology is the science which deals with weather and climate. Climate may be defined as average weather. Climate has an obvious influence on human life in different parts of the world, e.g. on food, clothing, housing, and occupations. In particular, climate exercises its influence through natural vegetation and the limits it imposes on crops. The three chief factors in climate are temperature, pressure and rainfall. A practical understanding of these factors can be obtained by observation of the instruments that record

them, i.e. the thermometer, the barometer and the rain gauge.

A study of the distribution of temperature over the surface of the earth leads to the generalization that temperature decreases with distance from the equator. The connexion of this decrease with the greater obliquity of the sun's rays as one proceeds away from the equator should be noted. Another factor influencing temperature is altitude. Pupils often find it difficult to understand why it gets colder as one goes upward closer to the sun. They should understand that the heat of the air around us is due chiefly to the heating of the surface of the earth by the sun's rays. A third factor is the sea, which exercises a moderating influence, places near the sea having an equable climate.

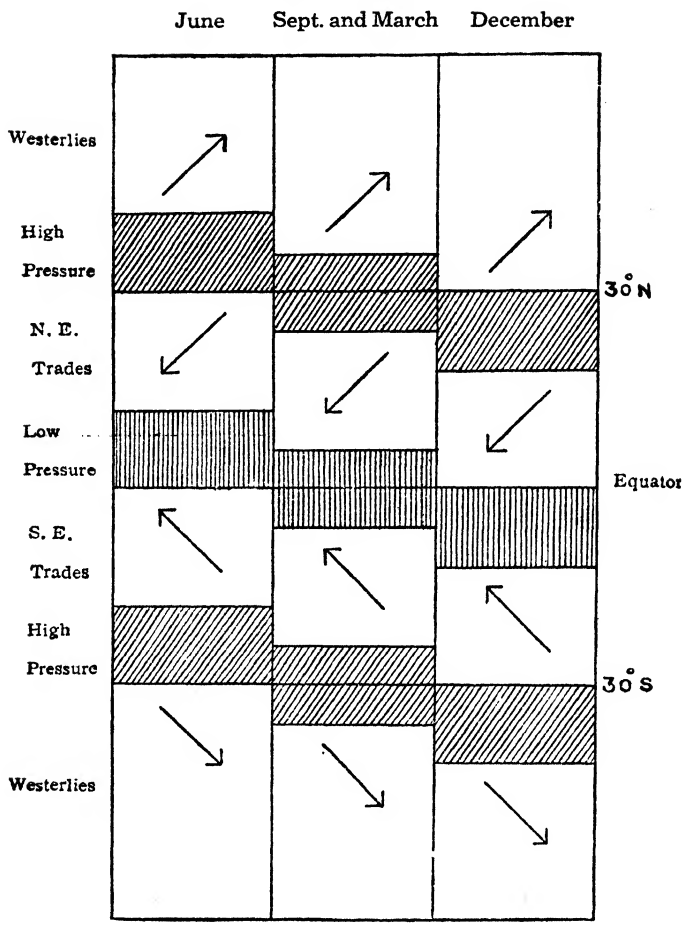
Pressure is important chiefly in connexion with winds. The fundamental law that air moves from areas of high pressure to areas of low pressure is readily intelligible to any pupil who has had a bicycle tyre punctured. Hot air is lighter than cold air ; so areas of heat are areas of low pressure. This explains why the trade winds constantly blow from the belts of high pressure about 30° latitude towards the belt of equatorial heat. This explains also why, when the surface of India becomes very hot in summer, the monsoon winds blow from the cooler sea into India. The

distribution of the prevailing winds of the world can best be indicated by a diagram.



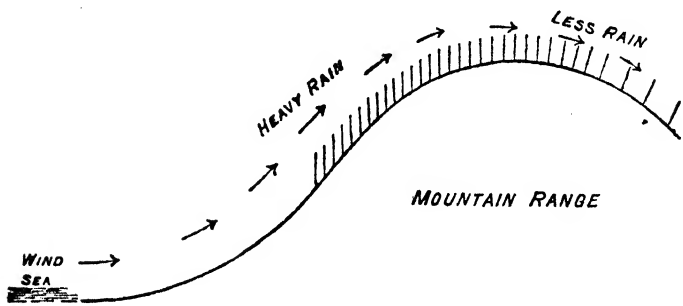
The proof of Ferrel's Law is not required in schools, but the law itself should be known. The annual migration of the wind belts has important consequences and must be explained. This is not an easy lesson to teach, but it can be made clear with the aid of a diagram.

Rainfall is connected with winds, as winds blowing from the sea bring moisture. The main principle to be grasped is that hot air can contain more moisture than cold air and that, if air that

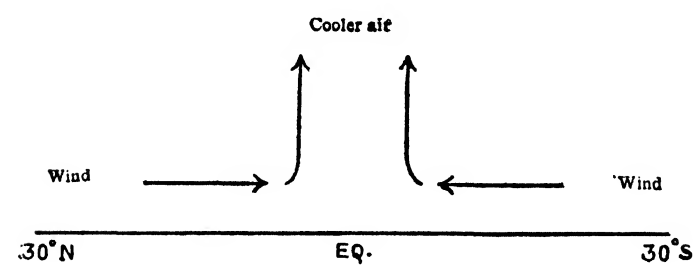


is saturated with moisture is cooled, as by ascent to cooler regions, it must drop some of its

moisture. The effect of mountain ranges in the causation of rain may be shown by a diagram.



When the circulation of air in the tropics is understood and the principle that cool air cannot contain as much moisture as hot air, the cause of the convectional rains of the equatorial belt can be explained by a diagram.



In teaching facts about climate it is best to put before pupils some definite statistics, which need

not, however, be learnt by heart. Phrases like hot summers and cold winters, warm summers and cool winters, moderate rainfall, poor rainfall, are apt to leave the minds of the pupils rather hazy. To illustrate, for example, the difference between an equable and an extreme climate the following figures may be quoted :—

Temperature	*Jan.*	*May*	*Annual Range*
Bombay	75°	85°	10°
Allahabad	60°	93°	33°

A good exercise in the higher classes is to give the climatic statistics of a few places and let the pupils infer the names of the places. The following question, which was set in a recent public examination, is an example of this kind.

	Mean Temp. Jan. F.°	Mean Temp. July F.°	Annual Rainfall. Inches.
(*a*)	78	80	93
(*b*)	53	81	1
(*c*)	-3	66	20
(*d*)	72	52	48
(*e*)	50	90	13
(*f*)	55	55	42

The above sets of climatic statistics apply to the following places : State the place to which

each set applies. Winnipeg, Sydney, Quito, Cairo, Singapore, Peshawar.

Climatic statistics of typical towns in different regions of the world will be found in Kendrew, *The Climates of the Continents,* an excellent, but rather expensive, book; in Howarth, *Climate and Geography;* and in Elliott and Goadby, *Geographical Statistics.* The climatic statistics of the principal Indian towns are included in the *Indian Year Book.*

Geology is the science that deals with the earth's crust. As we have to deal in geography with the surface features of the earth, we can hardly ignore a science that classifies and explains many of these features. Geology explains, for example, how plains and deltas have been formed by rivers, how mountain ranges, such as the Himalayas, have been forced up, why the north of Canada has so many lakes, and many other points that must arouse the curiosity of intelligent pupils when they study the surface features of the earth.

The most important geological topics that deserve a place in school geography seem to be the following.

A. External forces affecting the surface of the earth: the work of rivers (erosion, transport and deposition), the work of glaciers, the work of

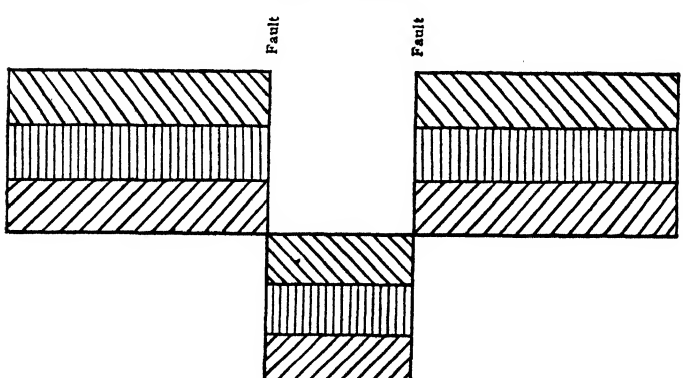
wind in dry regions, destructive and constructive action of the sea on coasts, the weathering of rocks.

B. Internal forces affecting the surface of the earth : elevation and subsidence, land and sea, heights and depths, the folding of mountains, faults, rift valleys, volcanic action, earthquakes.

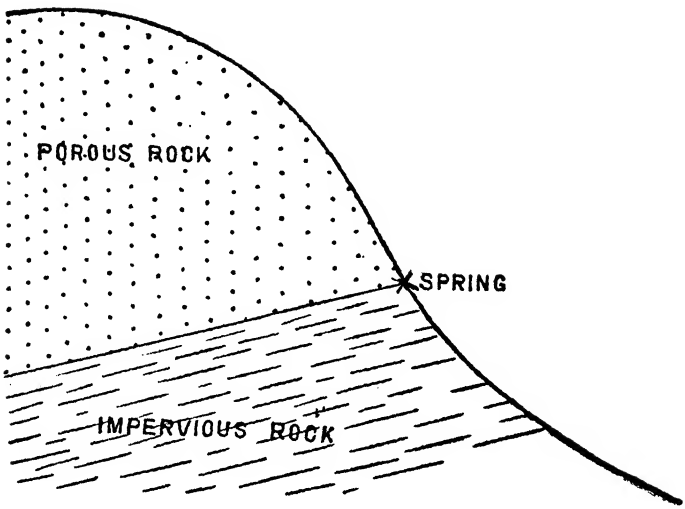
C. Igneous and sedimentary rocks, soils, minerals, underground water.

Some geological work can be done out of doors, such as the observation of the work of a river and the collection of specimens of local rocks like sandstone, limestone, clay, basalt. Much help can be obtained from pictures and slides of such features as glaciers, volcanoes, deserts and sea coasts. Diagrams are also useful, as, for example, the diagram of a rift valley or spring.

Rift Valley



Spring



The folding of mountains can be illustrated by placing a piece of cloth, or sheet of paper, flat on a table and then pressing its sides inwards until the central part is forced upwards.

It is not possible to get very deeply into the question of soils, but some reference should be made to the relative fertility of stony soils, sandy soils, clayey soils and loamy soils. Loam is a mixture of sand and clay and is the most fertile soil known, especially when it contains humus, or decayed vegetable matter. Soils found in lowlands are generally better than soils in highlands, because the finer particles are constantly being

eroded and brought down from highlands by water and other agencies and deposited in the lowlands. Exhaustion of the soil, the rotation of crops and fertilizers should be briefly dealt with.

The distribution of minerals of economic importance should be taken up with the regional study of the earth, because the location of these in certain parts must appear arbitrary. Some authorities advocate spreading all geological topics over the regional geography, taking up the work of rivers in connexion with the Mississippi, the work of glaciers with the Alps, and so on. This idea is inspired apparently by the erroneous belief that geological topics by themselves cannot be made sufficiently interesting to the pupils. Some correlation there must, of course, be between geological and regional geography, but it seems reasonable and logical to take up together topics that are related to one another, such as the various forms of erosion.

With reference to oceanography, an elementary survey of the earth's surface brings into prominence the far greater extent of the water surface as compared with the land surface. The location and extent of the chief oceans and seas should be known. Man makes use of the ocean chiefly for navigation; so the chief ocean trade routes are important. The obstruction given to navigation by polar ice and the facilities afforded by the Suez

and Panama Canals should be noted. Many inlets of the sea are important as harbours. Another way in which oceans affect the lives of men is in the causation of rain and by the moderating effect they exert on climate. This is most marked when the prevailing wind is from the ocean to the land, as in the British Isles. In this connexion some knowledge of the principal ocean currents and drifts, warm and cold, should be given. Shallow seas abound in fish, which is one of the most important foods of man, and the location of some of the most important fishing grounds has an important bearing on human geography.

III

BIOLOGICAL FACTORS

In its relation to botany geography deals with the distribution of natural vegetation and of cultivated plants. Botany makes a minute classification of plants into natural orders, genera and species : geography recognizes a few broad divisions only. Botany has a name for every plant ; geography is content with the names of only a few plants of economic importance.

The main types of natural vegetation in the world are equatorial forest, monsoon forest, deciduous temperate forest, coniferous forest, grasslands (savanna and steppe or prairie), scrub deserts and deserts. The distribution of natural vegetation depends mainly on climate. Where there is continuous warmth and rain throughout the year, as in the equatorial belt, there is dense evergreen forest ; where there is not enough rain for tree growth, but enough for grass, the great grasslands of the world are found, as in Canada and Siberia ; where there is insufficient rainfall even for grass to grow, one finds the scrub deserts and the deserts. Coniferous trees with their narrow leaves are specially adapted to withstand cold and so coniferous forests are found in the

polar margins of temperate lands and on high mountains. Broadly, where the rainfall is over 25 inches, the natural vegetation is forest; where the rainfall is between 25 and 10 inches, the natural vegetation is grass; where the rainfall is less than 10 inches, we find scrub deserts and deserts.

The influence exerted by a particular type of natural vegetation on human life in different parts of the globe is roughly the same. Thus we find that equatorial forests, whether in the Amazon basin, the Congo basin or elsewhere, are generally thinly populated, small groups living in clearings in the forests, often on the banks of rivers. The native inhabitants are low in the scale of civilization and maintain themselves by collecting fruits, fishing, hunting and a little primitive agriculture. Again, hot deserts, wherever they may be situated, are generally thinly populated by a few oasis dwellers and by nomadic tribes that wander from one scanty pasture to another, depending for their maintenance on their animals, among which the camel is of special importance. Civilized man has to a great extent shown himself superior to his environment. The question of the interaction between man and his environment will be discussed more fully in the next chapter.

Forests occupy about 15 per cent of the total area of India and are of immense economic

importance to the country. A more careful study of these forests than is usually made is desirable in Indian schools. India is a large country with many different types of climate and so has many different types of forest. The principal kinds are the evergreen forests of the Western Ghats and the Eastern Himalayas, the Himalayan forests with their pines and deodars, the monsoon forests of peninsular India with teak and sal as important timber trees, the mangrove forests of the coasts, as in the Sunderbans, and the arid forests of Sind and Baluchistan with the typical babul tree. The wealth of Indian forests depends, not only on the production of valuable timber for building and other purposes, but on a great variety of minor products, such as grass for fodder, fruits, gums, lac and bamboos, which may prove valuable for paper making.

The duty of Government to conserve the forests may be emphasized. Trees take a long time to grow and private owners cannot be expected to take a great deal of trouble to secure benefits for posterity. Government forest policy is directed mainly towards protection, regeneration and development. Protection against robbery is secured by a staff of forest guards and protection against fire by cutting wide lanes, or fire lines, to prevent fire spreading from one block of forest to another. Some forests, e.g. pine forests,

contain one species of tree only and these regenerate themselves after cutting. In mixed forests, however, Government has to see that, when valuable trees are cut down, equally or more valuable trees come up to take their place. By development is implied, chiefly, opening up roads and railways to enable valuable timber to reach markets, establishing saw-mills in forests to cut up the timber and make it more portable, and research work.

Turning to cultivated plants, we find that the geographical factors that determine which plants can be grown in any particular region are climate and soil. It would be no use trying to grow rice in Canada or wheat in the Ganges delta. The following examples are given to show the conditions favourable for the successful growth of some important crops.

Rice.—A temperature of over 70° F., a rainfall of over 5 inches a month during the growing season and an impervious soil, such as clay, to hold the water. Suitable conditions are found in river valleys and deltas in monsoon regions.

Wheat.—A cool growing season with some light rain, sufficient sun to ripen the grain and a good soil. In India it is grown in the north-western parts and in the Nerbudda valley as a cold season crop, but in the other parts of the world, such as Europe, North America and Australia, as a summer crop.

Sugar cane.—Heat, moisture and a rich well-drained soil. It can be grown only between 37° N. and 30° S. latitudes and requires over 60 inches of rain per annum. Cuba, India and Java are the chief growers, but India does not grow half enough for her own consumption and has to import from Java.

Sugar beet.—A well-drained soil, light rain and an average summer temperature of about 60° F., as in the north German plain.

Tea.—About 100 inches of rain, warmth and a well-drained soil. In India, Assam, Darjeeling, the Nilgiris and the Himalayas of the United Provinces are the chief tea-growing areas.

Cotton.—Warmth, light rainfall and a soil tenacious of moisture. After the boll, or flower, opens, there should be no rain. The black soil region in western India is suitable.

Jute.—Heat and heavy rain during the three months' growing season, a fertile soil and abundant water for retting. Conditions are very favourable in the Brahmaputra valley in eastern Bengal and, to a lesser extent, in the Ganges delta.

Coconut.—A mean temperature of 70-90° F., a rainfall of over 40 inches and proximity to the sea.

Rubber.—Heat and rain throughout the year, as in the equatorial region.

Coffee is best grown on mountain slopes within the tropics, as in the San Paulo district of Brazil.

Cocoa is chiefly grown in sheltered valleys within 15° of the equator, e.g. in West Africa.

It will be seen from the above that geographical conditions limit to a great extent the choice of crops that cultivators can grow in different parts of the world.

In the province of zoology the geography teacher may refer in passing to interesting wild animals such as tigers, lions, giraffes, kangaroos, but there is no need to deal with wild animals very fully, as these have not as a rule a great influence on human life, except perhaps elephants that provide ivory from their tusks and the fur bearing animals of the coniferous forests.

Fishing is an important industry and fish form a part of the diet of a large portion of the human race. The usefulness of shallow seas, such as the North Sea and the Inland Sea of Japan, for fishing, should be stressed, and important fishing grounds, such as the Grand Banks off Newfoundland, noted. River fisheries, such as the salmon fisheries of British Columbia, should be mentioned when they engage a large number of people. Descriptions of fishing methods and of the preparation of fish for the market in canning factories, etc., may be given in the human geography of various regions.

Some insects have sufficient influence on the lives of men to deserve mention in geography. Among these are the mosquito, which carries malaria and yellow fever, and the tsetse fly, which causes sleeping sickness and renders vast areas in Africa impossible for animals such as horses and cattle.

Domesticated animals, such as cattle, buffaloes, horses, sheep, goats and camels have great economic importance and geographers must deal with their distribution, the conditions favourable for their health and increase, and the use man makes of them in different parts of the world. The number of cattle in India is estimated to be 160 million, but compared to the cattle in other countries the quality is inferior. This is due to poor feeding and indiscriminate breeding. Fodder crops for cattle are not usually grown in India and a great part of the available pasture is eaten up by useless cattle. In a few parts of India selective breeding has resulted in a great improvement in quality.

The way in which different animals are adapted to different environments should be stressed, as, for example, the way in which the camel is adapted to desert conditions. The great grasslands of the world are specially suitable for the rearing of cattle and sheep, cattle in the wetter and sheep in the drier parts. The Australian downs, the South African veldt and the South American pampas are

well-known breeding grounds. The goat is lauded as ' the poor man's cow ', but it is a most destructive creature unless carefully controlled. It is believed by some that the desiccation of many parts of Asia, such as the plateau of Anatolia, is largely due to the destruction of forests owing to goats eating up all the young plants.

IV

HUMAN GEOGRAPHY

GEOGRAPHY is not a mere recital of unrelated facts. Most geographical facts are related to other geographical facts and it is the business of geography to elucidate these relations. In geography teaching, therefore, cause and effect should be traced wherever possible and in particular the influence of physical and biological factors on human life.

So long as we are considering only the physical and biological factors of geography we can connect cause and effect with a fair degree of confidence. We know, for example, that the revolution of the earth round the sun and the inclination of its axis cause the seasons and that the rotation of the earth causes day and night. We know that rivers by depositing material eroded from higher levels form plains and deltas. We know the effect of mountain ranges that lie in the path of moisture-laden winds, and we know the relation between rainfall and natural vegetation.

When we consider human geography, it is best to proceed with some caution is deducing causal relations. Human beings have some freedom and are not entirely dependent on their environment.

One group of human beings may avail itself fully of the natural resources existing in its environment, another group may not. The coal of Britain, for example, is being fully exploited ; in China immense quantities of coal are known to exist, but very little is being worked. It is preferable, therefore, in tracing the influence of geographical conditions on human activities not to use the word 'cause', but to use some such expression as 'favour the development of'. Thus the existence of coal in Britain was not the cause of the growth of British industries, but it did favour the development of those industries.

Again, man has in many ways by intelligence and industry surmounted the obstacles imposed by nature. He has pierced mountain barriers by railway tunnels and turned deserts into productive fields by means of canals. Formerly the sea was an impassable barrier ; then man ventured on it in little ships that were largely at the mercy of the winds ; now he steers his ships on the sea where he likes. Aeroplanes now cover in a few hours journeys that would take men without mechanical means a month to perform. As time goes on, man tends to be less and less dependent on his environment.

Nevertheless, although we must concede some freedom of action to human beings and power to overcome natural obstacles, the geographical

environment does impose certain definite limitations on human activities. Wheat is not grown in the equatorial lowlands, nor rice in Canada. Cotton is not grown in the Ganges delta, nor jute in the Deccan. It would be futile to dig into the earth at any point selected at random and expect to find gold or coal or some other valuable mineral.

Human settlement is governed largely by geographical conditions. The population is densest where life is comparatively easy. River valleys have a fertile alluvial soil and, if temperature and rainfall are adequate, they can provide food for a large number of people. Mountain regions, on the other hand, are generally barren and can support comparatively few people. Hence one finds a dense population in the Ganges valley, but not in the Himalayas. Grasslands suitable for pasture tend to be rather sparsely populated, as animals require large areas on which to graze. In desert regions the population is scanty or non-existent. The occurrence of valuable deposits such as coal or gold often attracts a dense population.

A study of the geographical factors that have favoured the development of cities is of great interest. Some important factors are noted below :—

1. Convergence of sea routes to get past an obstacle, through straits or through a canal

(e.g. Gibraltar, Aden, Port Said, Cape Town, Singapore).

2. Convergence of sea routes and land routes, i.e. ports. Essential conditions for development are a safe harbour, good lines of communication inland and a populous and productive hinterland. Ports may be on an inlet of the sea (e.g. Bombay, Sydney, Durban); on the estuary of a river (e.g. London, Hamburg, Buenos Aires) ; on the delta of a river (e.g. Calcutta, Rangoon, Canton) ; close to, but not on, the delta of a river, to avoid silting by mud brought down by the river (e.g. Karachi, Marseilles, Alexandria).

It may be noted that conditions favourable for the development of Bombay were not completely fulfilled until the railway was carried over the Western Ghats to provide good lines of communication inland. It may be noted also that ports on deltaic rivers such as Calcutta, are always in danger of being silted up. Indeed, unless drastic action is taken, the future of Calcutta as a great port is extremely doubtful.

3. Convergence of land routes to get past an obstacle, through a gap or pass (e.g. Peshawar, Delhi, Chicago).

Note the position of Delhi in the gateway to the Ganges valley between the Himalayas in the north and the Thar desert in the south. This

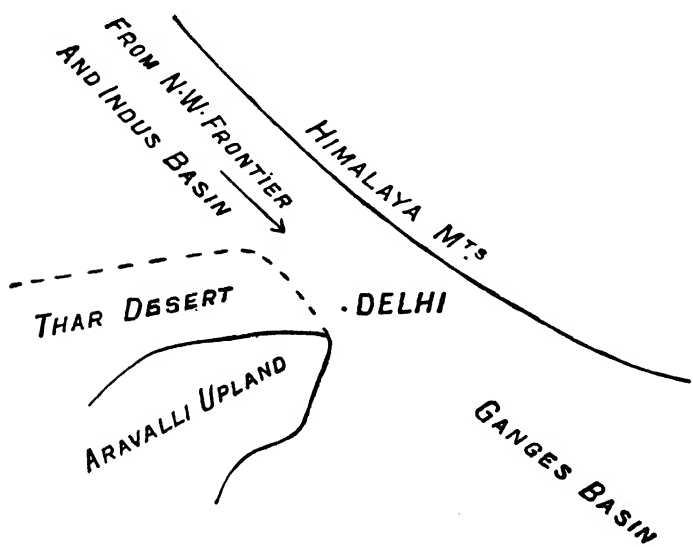
explains why so many battles were fought in the plain of Panipat near Delhi.

4. Convergence of river valleys (e.g. Allahabad, Khartoum, St Louis).

5. Bridging places, often at the nearest possible point to the sea (e.g. London, Paris).

6. Minerals (e.g. Jamshedpur, Johannesburg, the Lancashire towns).

Sketch Map showing the position of Delhi



Like human settlement, human occupations also are governed largely by geographical conditions. Where warmth and rainfall are adequate and the

soil is fertile, agriculture is an important occupation. The nature of the crops grown is largely determined by geographical conditions, as has been indicated in the last chapter. Wheat, for example, is grown in some parts of India, rice in other parts and millet in other parts. Grasslands provide pasture for enormous herds of animals, as in the grasslands of South America, South Africa and Australia. The sea and inland waters provide for fishing.

The occurrence of valuable deposits, such as coal, gold, oil, has provided work for a large number of miners and others, as, for example, in the Rand area of South Africa. The existence of one of the three chief sources of power—coal, oil or water-power—is favourable for the development of industries, especially if raw materials, such as iron and cotton, can be easily obtained. The industries of Britain, which provide occupation for millions of people, have been based on the deposits of coal in the island. For the mills of Bombay rain-water collected on the Western Ghats provides power.

With the development of industries the business of simple buying and selling has developed into commerce on a very large scale, involving financial transactions of a very complicated kind. Commerce and finance now provide occupations for a large number of people.

Transport and communications are essential to commerce, which generally involves buying in one place and selling in another. Railways and roads tend to follow easy lines of communication, such as river valleys. The G. I. P. and E. I. railway line from Bombay to Calcutta follows the Nerbudda and Ganges valleys for the greater part of its length, and the Hudson valley from New York carries no fewer than six railway lines. Rivers themselves carry a great deal of traffic, e.g. the Yangtse, the St Lawrence, the Rhine and the Danube. In many countries, as in France, water transport by rivers is supplemented by canals. The sea itself is an important highway. Ocean trade routes are determined by the natural distribution of land and sea, except where man has created new routes by digging canals, such as the Suez and Panama Canals.

Human society with the advance of civilization has become more complex and many specialized professions, such as those of doctors, lawyers, teachers and engineers, have sprung up. Forms of government and administration have also become more complex. No study of geography would be complete without some knowledge of the way in which people live and are governed in different lands.

The principle of tracing causal relations, where possible, has an important bearing on the order

of topics in the study of any area, whether a continent, a country, a province or a natural region. Generally it will be found best to take the physical and biological factors first and the human factors afterwards so as to bring out the effect of the physical and biological factors on the human factors. The logical order of topics would thus generally be somewhat as follows.

Physical and Biological

1. Position
2. Relief
3. Climate
4. Natural vegetation
5. Minerals

Human

1. Distribution of population
2. Occupations ; agriculture, industries, trade
3. Cities
4. Communications
5. Social life, Government, etc.

It is not suggested that the above order should always be religiously followed. The order should be varied to suit the area being studied. In unimportant areas some of the topics may be omitted altogether. In other areas topics not included in the above list require study, e.g. geological structure or wild animals.

The order suggested above may be regarded as the logical order. But the logical order is not always the best for school purposes. The psychological order is sometimes better, especially in the lower classes. The psychological order means, in effect, beginning with something that will attract the attention of the pupils. Thus we might begin a lesson on Japan with a picture of Fujiyama, going on to the mountainous and forested nature of the greater part of Japan. If any exciting events have recently taken place, such as fighting in Manchuria or floods on the Yangtse, these may be made use of in enlisting the attention of pupils.

V

THE REGIONAL METHOD

To explain what is meant by regional geography or the regional method of teaching geography it is necessary first to define the term, natural region. A natural region is one that is naturally different from the adjoining regions. Thus the region of the Himalayas is naturally different from the region of the Ganges valley and the wet western coast strip of peninsular India is naturally different from the drier Deccan plateau. A natural region is essentially different from a political division, though the two may occasionally coincide. Politically the Indian Himalayas are apportioned among a number of different provinces and states, e.g. the Punjab, the United Provinces, Nepal, Sikkim, but naturally they form one major natural region.

When we embark on the study of any unit, whether it be the world, a continent, a country or a province, we soon come to an end of what we can usefully do by studying the unit as a whole. To make a more detailed study we have to break up the unit into smaller units and study each of these separately. The question then arises how we should subdivide our unit. One

way is to take the political subdivisions. The other is to divide the unit into regions that are naturally different from one another. The latter is the most scientific method. If we accept the definition that geography is the study of the interaction of man and his physical environment, it is clearly best to take up for study different types of physical environment, i.e. different natural regions. The major political divisions are, of course, of great practical importance and must be taught sometime, but for the purpose of relating the physical environment and human activities the study of natural regions is most effective.

The regional method of teaching geography is, then, a method in which the area studied is divided into natural regions, each of which is studied separatively. Thus, we may divide Ceylon into two natural regions :—

(1) the central mountain mass ; (2) the surrounding plains.

Scotland may be divided into three natural regions :—

(1) the Northern Highlands ; mountainous, poor soil, few people ;

(2) the Southern Uplands ; hilly, sheep pastures, few small towns ;

(3) the Central Lowlands ; good soil, coalfields, rivers Forth and Clyde, industries, dense population, Edinburgh, Glasgow.

The chief advantage of the regional method is that it is the quickest way of getting pupils to grasp the salient features of the geography of any area. No other method can give so quick a start or so sound a basis for further study.

It should be noted that the boundaries of natural regions are often not exactly defined and that one natural region often merges insensibly into another. It should be noted also that in making broad divisions minor divisions have to be overlooked. The nature and number of the divisions made depends on the degree of closeness of study deemed necessary. In some cases it is useful to make broad divisions first and to subdivide them afterwards. Thus, the Yangtse valley may be taken as one major region and then subdivided into three minor regions, the Red Basin, the lower valley and the delta.

The chief factors to be considered in dividing an area into natural regions are relief and climate. On relief and climate are dependent the vegetation and animal life of a region and consequently to a great extent the nature of human life in that region. In dividing large areas into natural regions climate is more important and in dividing small areas relief.

Let us consider the natural regions of the world. It is obvious that the polar regions are different in climate from the equatorial regions

and that deserts and forests and grasslands are different from one another. Barker and Brooks in *Regions of the World* give the following regions : —

1. Lands of Snow and Ice
2. Lands of Cold Forests
3. Lands of Broad-leaved Forests
4. Temperate Grasslands
5. Mediterranean Lands
6. Desert Lands
7. Equatorial Forests and Tropical Grasslands
8. Monsoon Lands
9. The Islands of the Pacific
10. High Mountain and Plateau Lands
11. The Industrial Regions of Europe.
12. The Industrial Regions of North America

Herbertson in his *Senior Geography* made a more detailed division of the world into natural regions, of which he recognized the following types : —

1. *Polar Types*

   (*a*) Lowlands, e.g. Tundra ; (*b*) Highlands, e.g. Norway ; (*c*) Ice-covered, e.g. Greenland

2. *Cool Temperate Types*

   (*a*) Western Margin, or West European Type
   (*b*) Eastern Margin, or St Lawrence Type
   (*c*) Interior Lowlands, or Siberian Type
   (*d*) Interior Highlands, or Altai Type
   (*e*) High Plateaux, or Tibet Type

3. *Warm Temperate Types*

(*a*) Western Margin, or Mediterranean Type
(*b*) Eastern Margin, or China Type
(*c*) Interior Lowlands, or Turan Type
(*d*) Plateau, or Iran Type
(*e*) Plateau with cold winters, e.g. Mongolian Type

4 and 5. *Types of Tropical Hot Lands*

(4*a*) Western Desert, or Sahara Type
(4*b*) Monsoon Summer Rain Type of eastern and southern margins
(4*c*) Summer Rain Type of Interior, or Sudan Type
(4*d*) Moderate Plateau Type of East Africa
(4*e*) High Plateau Type of Equador
(5*a*) Wet Equatorial Lowlands, or Amazon Type
(5*b*) Wet Equatorial Mountainous Islands, or Malay Type

In dividing a continent into natural regions we may base our division on differences of relief or on differences of climate. Often it is convenient to make two divisions, one according to relief and the other according to climate. Asia, for example, may be divided (after Stamp) into four main divisions of relief : —

1. The Northern Lowlands
2. The Central Highlands
3. The Old Plateaux of the South
4. The Great River Valleys

It may also be divided into climatic and natural vegetation regions as follows : —

1. The Tundra
2. The Coniferous Forest
3. The Temperate Grasslands
4. The Cold Deserts
5. The Hot Deserts
6. The Temperate Forests
7. The Monsoon Regions
8. The Equatorial Forests

Similarly in North America we have as the main divisions of relief : —

1. The Rocky Mountain System
2. The Central Plains
3. The Eastern Highlands

As the main climatic and natural vegetation regions we have the following : —

1. The Tundra
2. The Coniferous Forests
3. The Deciduous Forests
4. The Temperate Grasslands (Prairies)
5. The 'Mediterranean' Region on the West Coast
6. The Deserts and Semi-deserts
7. The Warm Temperate Forests
8. The Equatorial Forests

In dividing the chief countries of North America into natural regions we may base our division on relief, or on climate and natural vegetation, or on a combination of the two. Thus,

we may divide Canada into the following major natural regions : —

1. The Rocky Mountains and the Pacific Coast
2. The Cold North (Tundra and Coniferous Forest)
3. The Prairies
4. The St Lawrence Basin

It is not necessary for school purposes to divide every country in the world into natural regions, but it is desirable to divide in this way the more important countries in order that the pupils may obtain a firm grasp of the main natural divisions of each. The natural regions of Ceylon, Scotland and Canada have already been given above as examples. As a further example we may consider the natural regions of another country, China. In China three great river valleys are important factors in human life, as in these valleys the bulk of the population is concentrated. From a study of the relief of China the following natural regions emerge : —

1. The Basin of the Hwang-Ho, or Great Plain
2. The Basin of the Yangtse (Red Basin, lower valley and delta)
3. The Basin of the Si-Kiang
4. The South-East coast
5. The Shantung Peninsula
6. The Mountainous West

The natural regions of India, if only the major divisions are required, as in lower classes, are as follows : —

1. The Himalayas
2. The Indo-Gangetic Plain
3. The East and West Coast Strips
4. The Tableland Region

If, however, the division is to be more detailed, there is room for some difference of opinion. Many schemes are open to the objection that the borderland regions between the Deccan plateau and the Indo-Gangetic plain are not adequately dealt with. There is often some confusion about the northern boundary of the Deccan, which is taken variously as the Ajanta Hills, the Satpura Hills, or the Vindhya Hills, and immense areas are often conveniently ignored. The best division of India into natural regions seems to be that given by Mr. J. N. L. Baker in the Summer issue of *Geography* (1928). These are as follows : —

A. Peninsular India

1. The West Coast
   (*a*) north of lat. 16° N.
   (*b*) south of lat. 16° N.
2. The Deccan Region, bounded by the Ajanta Hills, the Chhattisgarh Plain and the Eastern Ghats.
   (*a*) The Deccan Lavas Region of the North-West
   (*b*) The Southern Region, including Mysore and part of Hyderabad
   (*c*) The Nilgiri Plateau

3. The High Plains of Berar and Nagpur, between the Deccan Tableland and the Central Highlands.
4. The Central Highlands (the Satpuras and the Chota Nagpur Plateau)
5. The Chhattisgarh Plain (chiefly the valley of the Mahanadi)
6. The Bastar-Orissa Highlands
7. The East Coast
   (*a*) north of the River Kistna
   (*b*) south of the River Kistna

B. Extra-Peninsular India

8. The North-West Frontier Region
   (*a*) north of the Kurram Valley
   (*b*) south of the Kurram Valley
9. The North-West Dry Area
10. Kathiawar and Gujerat
11. The Aravali-Vindhya Uplands
12. The Indo-Gangetic Plain, West
13. The Indo-Gangetic Plain, East
14. The Delta Lowlands of Bengal, including the Surma Valley
15. The Assam Valley
16. The North-East Hill Tracts
17. The Sub-Himalayan Region
   (*a*) east of Hardwar
   (*b*) west of Hardwar
18. The Himalayan Region
   (*a*) east of the western boundary of Nepal
   (*b*) west of the western boundary of Nepal

As an example of the regional method in dealing with the geography of a province we may

consider the natural regions of Assam. These are : —

1. The Brahmaputra Valley
2. The Hills Region
3. The Surma Valley

Enough has probably been said to explain what is meant by the regional method and to indicate its value in teaching geography. It is not intended in any way to minimize the importance in geography of a knowledge of the more important political divisions, such as countries. Each important country should in fact be regarded as a separate unit and divided into natural regions. With regard to the less important countries some discretion is necessary and some of these may be grouped together for purposes of study, e.g. the states of the Atlas region or of the Guinea Coast or the Baltic States.

VI

THE COMPARATIVE METHOD

PSYCHOLOGISTS have emphasized the important part played in the assimilation of new ideas by the existing content of the mind. The mind tends to interpret the new in terms of the old. It is well, therefore, for the teacher, wherever possible, to bring the new ideas which he wishes to present into relation with the previous experiences of the pupils ; in other words, to tack new knowledge on to old. This is the psychological basis for the pedagogical maxim : 'Proceed from the known to the unknown.'

Prompted by this idea the framers of geography courses usually begin the primary course with things that are familiar to the pupils, the school buildings and grounds, the village, the local river, the nearest railway line. From the pupil's home and from things that he can see with his own eyes his geographical knowledge is extended outwards to the district, province, country and continent. A sound knowledge of his home region provides a pupil with standards to which he can compare knowledge gained about other regions.

Some definite statistical knowledge about the home region, if only in round figures, is very desirable. A pupil should know the latitude and longitude of his home town or village, its altitude and the altitude of some neighbouring hills, its population and the population and area of the province. If a pupil in Jubbulpore knows that the population of Jubbulpore is approximately $1\frac{1}{4}$ lakhs, population figures for other towns have a definite meaning for him, because he has a standard to which he can compare the figures.

Some definite knowledge of climatic statistics in the home region should also be given in order that climatic statistics of other places should become intelligible to the pupils. A metal box with straight sides may be placed out in the rain and the depth of the rain-water collected in it may be directly measured and the result compared with the record of a rain-gauge. In this way a pupil will understand what is meant by one inch of rain. From actual observation of a thermometer he should understand what temperatures of, say, 40° F. and 80° F. feel like. He should know the annual rainfall of the place he lives in and the mean monthly temperatures of the hottest and coldest months. Climatic statistics will then acquire a definite significance to the pupil.

In the course of his teaching the geography teacher will find many occasions when a

comparison of new knowledge with knowledge already acquired will assist pupils to grasp and retain the new knowledge. Let us suppose, for example, that the pupils have learnt about the west coast of India, the mountains running parallel to the coast in the path of the monsoon winds and the densely forested western slopes; when they study the west coast of Burma, a comparison will bring out strikingly the points of resemblance. Incidentally a comparison of this kind not only facilitates the acquisition of new knowledge, but by recalling the old knowledge fixes it more firmly in the minds of the pupils.

Many other examples of profitable comparison of other countries with India will occur to the teacher. The monsoons of Indo-China, China and North Australia invite a comparison with the monsoon of India. The relation of the river Po to the Alps is very similar to that of the river Ganges to the Himalayas. A good way of beginning the geography of China is to start with the fact that Canton is in the same latitude as Calcutta. The delta of the Si-Kiang may thus be compared with the delta of the Ganges with its dense population and staple food crop of rice.

It may be well to note here that no two regions of the world are identical in every respect and that in comparing one region with another it is neces-

sary to bring out, not only the points of resemblance, but also the points of difference. Thus we may point out that, as there are no very high mountains like the Himalayas to shut out cold winds from the north, the winter in the Si-Kiang delta is cooler than in the Ganges delta.

A combination of the comparative and the regional methods results in considerable economy of labour. Certain regions of the world have the same kind of climate and may be expected to have the same natural vegetation, cultivated crops and modes of human life. We find, for example, on the western margins of continents, between the latitudes of 30° and 45°, regions of winter rain and summer drought, where the vine is a typical plant and where many kinds of fruits and cereals can be grown. This type of region is best known in the lands surrounding the Mediterranean Sea and so it is called the Mediterranean type. In other parts of the world we find regions of the Mediterranean type: in California, central Chile, the south-west extremity of Africa, the south-west of Western Australia and the south of South Australia. These regions may profitably be compared with the Mediterranean region and with one another.

In the same way, always remembering to point out differences as well as resemblances, we may compare the equatorial lowlands of the Amazon

and the Congo basins, the deserts of Arabia and Sahara, the prairies of North America and the steppes of Asia, the coniferous forests of Canada and of Siberia.

The three southern continents, Australia, Africa and South America provide excellent material for comparison. For this reason they are often studied in the same year. South of the equator, each of these continents has a warm current on the eastern side, and a cold current on the western side. These currents tend to make the western side arid and the eastern side more productive. The south-east trade winds bring rain to the eastern side, fostering luxuriant plant growth in the coastal strips, and adequate moisture, at any rate for pastoral purposes, in the interior grasslands—the Australian downs, the South African veldt and the South American pampas. As they proceed further inland, the moisture in these winds diminishes and grasslands give place to deserts—the great Australian desert, the Kalahari desert and the Atacama desert. In each continent a great mountain range runs parallel to the coast—the Great Dividing range, the Drakensberg and the Andes—and the effect of these ranges on rainfall may be compared.

Comparison is often a good exercise for revision and consolidation of knowledge gained. Thus, after both Great Britain and New Zealand have

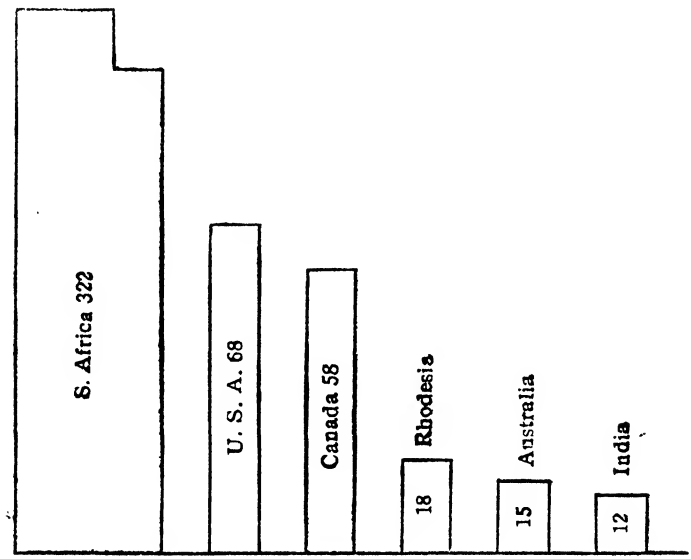
been studied, the two may be compared. Both consist of two main islands nearly equal in size ; both have mountains in the west and plains in the east ; both lie in the region of westerly winds and have therefore more rain in the west than in the east ; both have an oceanic type of climate ; wheat, barley and oats are the chief crops in both. On the other hand, Britain is mainly an industrial country and New Zealand a pastoral and agricultural country.

Similarly North and South America may be compared. Each is triangular in shape. In relief the Rockies correspond to the Andes, the Appalachians to the Brazil and Guiana Highlands, the central plains are common to both. Each has great rivers flowing east, south and north. The St Lawrence has a counterpart in the Amazon, the Mississippi in the Paraguay-Parana, the Nelson in the Orinoco. North America, however, is broadest in the temperate zone and South America in the tropical zone. Hence the greater population and economic importance of North America.

Diagrams drawn on the blackboard help greatly in the quantitative comparison of products, etc., in different parts of the world. These diagrams may be easily drawn on a squared blackboard, or, with the help of a blackboard ruler marked in convenient divisions, on an ordinary blackboard. An

example of the kind of diagram that may be drawn is given below.

PRODUCTION OF GOLD 1928
(Kilograms, thousands)



VII

LEARNING FROM MAPS

No geography teacher will question the value of maps in geography teaching. Maps are in fact indispensable. They are required in the study of most topics of regional geography, such as position, relief, climate, natural vegetation, minerals, the distribution of population, towns, industries, communications.

Wall maps are required for use by the teacher in class. Physical maps of each of the continents and of India are essential. If the political divisions are marked in the physical maps, political maps are not a necessity, but they may be used in addition to the physical maps. In no case should political maps be used instead of physical maps. In addition to physical wall maps, wall maps illustrating such topics as climate, natural vegetation, distribution of population and commercial development are desirable. Philips' Comparative Wall Atlases is a good series, consisting of eight maps for each of the continents and for India. An excellent large physical map of India is published by the Survey of India on a scale of 32 miles to an inch. This and excellent maps of different parts of

India may be obtained from the Map Office, 13, Wood Street, Calcutta.

In addition to using wall maps the teacher must frequently draw sketch maps on the blackboard to illustrate particular points in his teaching. Almost every lesson requires illustration by one or more blackboard sketch maps. Wall maps necessarily contain a large number of details and the teacher may want to focus the attention of the pupils on some particular details to the exclusion of others. He may wish, for example, to teach the natural regions of South America and have available only a wall map showing physical features, countries, towns and a number of other details. The teacher can best illustrate his lesson by drawing an outline map of South America on the blackboard and dividing it into natural regions. In this way he will present before his pupils a map showing exactly what he wants them to learn at the moment and no more.

In drawing sketch maps on the blackboard the outline often presents difficulty and takes up a great deal of time. It is advisable therefore to have available an outline of each of the continents cut out in tin or galvanized iron or three-ply wood or cardboard, so that by holding it against the blackboard and running a piece of chalk round it the teacher can in a few seconds obtain an outline

which he can fill in as he desires. In the case of countries, outlines may be drawn freehand, but time should not be wasted unnecessarily to get the outline perfect. For some sketch maps the outline is not required, as, for example, for sketch maps of town sites or of the Canadian-Pacific railway line.

Atlases are essential for use by pupils. Every pupil must possess an atlas. The teacher must insist on this and accept no excuse. Excellent atlases are obtainable at very reasonable prices, e.g. Bartholomew's *Oxford Indian School Atlas* and the *Taj Mahal Atlas.* Atlases should be constantly referred to by pupils to locate the physical features, towns, etc., mentioned in the textbook or by the teacher. The teacher should encourage the study of the atlas in class by frequently asking such questions as, ' Which are the chief rivers of France and in which direction do they flow ? Find out from your atlases ' ; or ' In which parts of South America are the highlands and the plains situated ? '

In modern wall maps and atlases more importance is attached to relief than to political divisions and to areas of high and low ground than to mountain ranges. The comparative heights of different areas are generally shown by means of a series of colours, mostly shades of green and brown. This system shows at a glance

very clearly the general relief of the whole area. The height of any particular part can easily be ascertained by reference to the key, or index, of colours which is always to be found near the margin of the map. The sea is usually shown in blue and the depth of water by different shades of blue. In this way the extent of the continental shelf is easily apparent.

Pupils should be given plenty of practice in drawing maps and sketch maps. Learning to draw from memory difficult outlines, as, for example, the continent of Europe, takes a great deal of time and this is not usually required by examining bodies. The outline of India is, of course, easy and every pupil should be able to draw this from memory. The outlines of other countries and of continents may be traced or drawn with the aid of stencils. Too much detail should not be shown on the same map. As a general rule, a separate map should be drawn to illustrate a separate topic. Thus, one map may be drawn to show relief, another to show the distribution of crops, another to show the distribution of minerals. Map drawing is a useful exercise for fixing some of the essentials of geography in the minds of the pupils by means of individual work and it is an exercise that may often conveniently be set for homework. Examples of the kind of maps that may be drawn

in the lower classes will be found in Taylor's *Foundation Exercises in Geography.*

In setting maps to be drawn by pupils it is best to be quite definite about the details required to be shown. Vague orders, such as 'Draw a relief map of Africa', should be avoided. The following is an example of map work that may be done by high school pupils in the course of their study of Africa.

1. Draw a map of Africa. Shade all land over 600 feet. Mark the Atlas Mountains, the Abyssinian Highlands, Mt Kenya, Mt Kilimanjaro, the Drakensberg Mountains, the Cameroons.

2. Draw a map of Africa. Show the four longest rivers and lakes Victoria, Tanganyika, Nyassa and Chad. Insert the Blue Nile, the Atbara, the Sennar dam, the Aswan dam, the six cataracts of the Nile, Juba, Khartoum, Cairo, Alexandria.

3. Draw a map of Africa showing the equatorial forests, the grasslands, the deserts and the 'Mediterranean' regions.

4. Draw to scale a map of the Suez Canal and insert Suez, Ismailia, Kantara, Port Said.

5 Draw a map showing the natural regions of So

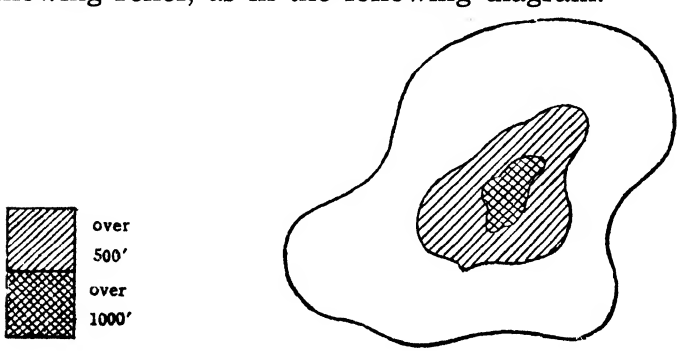
he chief railway lines

of iator inserting Cape

Town, Buluwayo, Victoria Falls, Elizabethville, Bukama ; Port Elizabeth, Durban, Johannesburg, Pretoria ; Beira, Salisbury ; Dar-es-Salaam, Ujiji, Mwanza ; Lobito Bay.

If any pupil wishes to paint his map, he need not be discouraged, but, if the painting is to be done well, it will occupy a good deal of time. Details of relief and of distributions can quite well be indicated by means of coloured pencils or by drawing lines neatly. The lines, as Fairgrieve points out, may be sloping, vertical or horizontal, or the whole area may be completely shaded. We can thus get a number of variations for illustrating distributions, e.g.

Combinations of these may also be used for showing relief, as in the following diagram.



It is essential that the pupils should be able to read maps. When they look at a map they should be able, not only to see a map, but to visualize the piece of country represented by the map. For this reason map work generally commences in the primary school with maps of the classroom, the school, the school compound and the village or the surroundings of the school. In this way maps are related to places actually familiar to the pupils and the relation of the map to the place mapped is grasped by the pupils. In some schools in England pupils are required to make actual maps of the school playground with the aid of plane table and chain. This is a useful exercise, if time can be found for it. Pupils should be taught what is meant by the scale of a map. If the map is a coloured relief or distribution map, the key should always be consulted in order to ascertain the meaning of the colours.

A detailed knowledge of map projections is not required in schools. Pupils should, however, be made to realize that every map must be inaccurate to some extent, either in shape or area, because it is impossible to represent accurately the surface of a globe on a flat piece of paper. Some idea of conical and cylindrical projections may be given by fitting a paper cone and a paper cylinder to a globe. A candle and a globe consisting of two

wire hemispheres will be found useful in teaching projections. To correct wrong impressions that may result from studying geography constantly from a flat map a globe should be frequently referred to and may be kept constantly in view in the geography room.

VIII

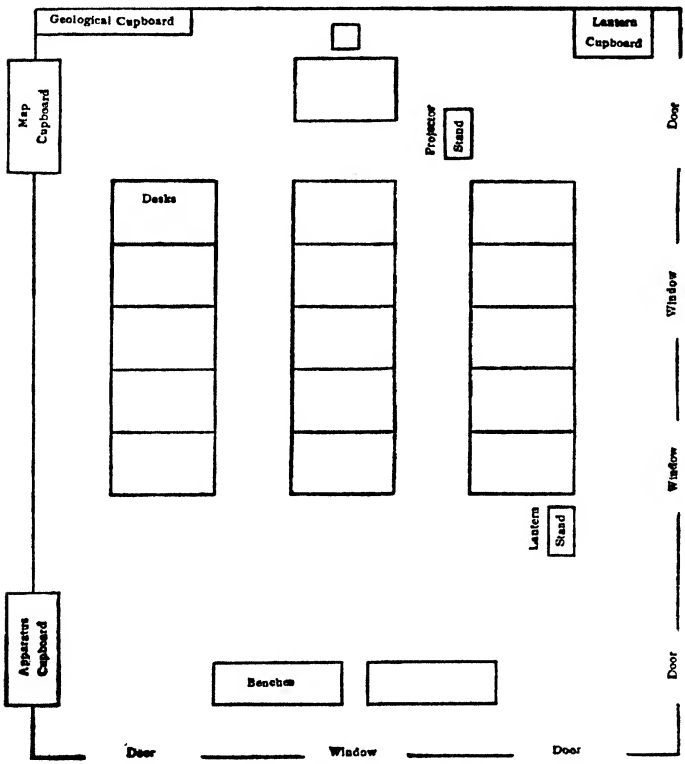
THE GEOGRAPHY ROOM AND APPARATUS

For physics and chemistry in secondary schools a separate room is usually allotted and fitted up with the apparatus necessary for teaching the subjects. For the efficient teaching of geography a good deal of apparatus is required and it will be found most convenient if a separate room is allotted for geography also and suitably equipped. This creates a favourable atmosphere for geography teaching and avoids the waste of time and damage involved in moving about maps, pictures and apparatus from one classroom to another.

Instead of discussing an ideal geography room it seems preferable to describe a geography room that has actually been fitted up—that at Spence Training College, Jubbulpore. The dimensions of this room are 30×25 feet. The wall on the west side is blank and the wall on the south side has two recesses in which are placed cupboards. The north wall has two doors and two windows and the east wall two doors and one window. On the west side the blackboard runs the whole length of the wall. In addition to the wall blackboard there is a movable squared blackboard which is useful for drawing graphs. In front of

the blackboard are the teacher's table and chair and a movable stand for the display of maps.

Below one end of the blackboard against the wall is a low cupboard, 3 feet high, $3\frac{1}{2}$ feet long and 2 feet wide, in which are kept the lantern and other apparatus for projecting pictures. Below



THE GEOGRAPHY ROOM IN SPENCE TRAINING COLLEGE, JUBBULPORE

the other end of the blackboard is another cupboard, 3 feet high, 6 feet long and 1 foot wide. This has sliding doors fitted with wire netting and on its shelves are specimens of local rocks such as granite, basalt, sandstone, limestone, marble and clay. Below the blackboard and between the two cupboards hang the stencils of the continents cut out in tin, galvanized iron or three-ply wood. With the aid of one of these stencils the teacher can quickly draw the outline of any continent on the blackboard.

The map cupboard ($5\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{2}$ feet) is in a recess in the south wall and contains 40 maps, or pictures mounted on rollers. Hooks are screwed from below into the top of the cupboard, and maps, tightly rolled, are suspended vertically from these hooks by means of rings screwed into the ends of the rollers. The hooks in the top of the cupboard are arranged diagonally, so that the title of any map can be seen. A description of a map cupboard of this kind will be found in Fairgrieve, *Geography in School.* The advantages of such a cupboard are that it occupies little space, that maps are kept clean and free from dust and that any map can be readily found. On the top of the map cupboard is placed a globe, which can easily be taken down whenever required for demonstration purposes.

The other recess in the south wall also

contains a cupboard. This is of the same dimensions as the map cupboard, but it is fitted with shelves on which are kept pictures, lantern slides and other apparatus. Some of the pictures are large and have been mounted on cardboard to make them suitable for being held up in front of a class. Many of these were cut out of *Indian Pictorial Education,* a magazine that has unfortunately ceased to exist ; others from *Pictorial Education* and other periodicals. Other pictures, such as Black's *Geography Pictures,* are smaller and are suitable for display in an epidiascope or projector. The lantern slides are arranged in boxes which are classified under different heads.

Among the other articles kept in this cupboard may be mentioned the orrery, which is useful in teaching the astronomical part of geography ; the mapograph, by the aid of which maps of the continents can be rapidly duplicated for the use of pupils ; and a wire globe, which is useful in teaching map projections. A circular blackboard protractor is also kept here. This simple instrument was made of wood in the college manual training centre and is used for drawing on the blackboard a circle on which the equator, poles, tropics or any desired degree of latitude can be quickly and accurately marked off. Another simple instrument, also home-made, is a blackboard ruler, 2½ feet long, divided into 100 parts.

With the help of this ruler diagrams of percentages, e.g. of crop production, exports and imports, can be quickly drawn. Small stencils for drawing the outlines of continents in exercise books are also kept here.

A picture rail runs just above the tops of the doors and windows all round the room, except for the whitewashed square which is used as a screen on to which lantern pictures are projected. On this rail rest a number of large pictures of different parts of the world, for example, pictures of the Egyptian desert, of Niagara Falls, of the Houses of Parliament, London. Below the rail hang other pictures and also some of the best maps drawn by the students. These maps have been mounted on three-ply wood, which is durable and less liable to warping than cardboard.

If the object of geography teaching is to enable pupils to visualize human environment and human life in different parts of the world, it is obvious that pictures should play an important part in geography teaching. Holding up large pictures before a class is useful, but often all the pupils cannot see all the details sufficiently clearly. Passing small pictures round a class takes a long time and the pictures soon become dirty and damaged. The most effective way of showing pictures to a class is by projecting pictures on to a screen either through slides, as in a magic

lantern, or from the pictures themselves by means of an epidiascope or projector. To do this in the daytime the room has to be darkened. To keep out the bright sunlight in an Indian classroom is not easy, but it can be done.

To enable the geography room in the Spence Training College to be darkened, the doors are fitted with wooden panels instead of glass panes, and dark curtains are fitted to the windows. The clerestory windows have been removed and black tin sheets fixed in their place, one overlapping the other, so as to admit air but not light. To diminish the amount of reflected light, the walls are colour-washed except for a whitewashed patch eight feet square, which serves as a screen for lantern pictures. By shutting the doors and windows and pulling the curtains the teacher can in a few seconds darken the room sufficiently for projecting pictures. It may be objected that shutting doors and windows obstructs ventilation, but, as the room is fairly large and as the time devoted to projecting pictures is usually limited to about 10 to 15 minutes, which is generally ample to illustrate any particular lesson, little harm can be done.

One means of projecting pictures from slides is the ordinary magic lantern. As a screen for the pictures a whitewashed part of the wall above the blackboard serves very well and there is no need

to fix up a cloth screen. A stand, about 4½ feet high, is placed about 20 feet from the screen for the lantern. Illumination for the lantern is obtained by electricity from a plug in the wall. Where electricity is not available, acetylene gas may be used, but the gas takes time to prepare and is liable to create an unpleasant smell.

Reflecting sunlight from a mirror is another and very simple means of providing illumination for projecting pictures through slides. To utilize sunlight a lantern is not necessary, only a slide carrier and a lens carrier, fitted with an ordinary converging lens, being required. These are placed on the stand about 20 feet from the white-washed wall. A beam of sunlight is reflected from a mirror placed outside, through a door, through the slide and the lens on to the wall. In order to keep out light that is not required it is best to fit the door with a dark curtain containing an adjustable aperture; otherwise, only so much of the door may be opened as is necessary. An ordinary plane mirror is used, its bevelled edges being pasted over with black paper. As the sun moves, the mirror has to be adjusted from time to time. Focussing is effected by adjusting the distance between slide and lens. To obtain any required angle of elevation the slide and lens carriers are fitted on a grooved platform which can be tilted by means of wooden blocks placed

under it. The platform and the slide and lens carriers are made of wood one inch thick and are of the following dimensions :—platform, 1 ft. 9 ins. × 10 ins.; slide carrier, 11 ins. × 10 ins.; lens carrier, 10 ins. × 6 ins. A large sheet of cardboard is fitted over the lens carrier to keep off superfluous light. This simple contrivance was designed by Professor N. N. Mitra of Spence Training College.

An epidiascope is an instrument which provides at will either diascopic projection through slides, as in an ordinary lantern, or episcopic projection from opaque objects such as pictures. Most instruments used for projecting pictures from opaque objects are epidiascopes, but that used in Spence Training College, Evans's Universal Projector, gives episcopic projection only. It is effective and much cheaper than an epidiascope and was obtained from the Times of India Press, Bombay, for Rs. 275/- only. As for an epidiascope, electric current is required for its illumination.

To project maps, diagrams and pictures in which lateral inversion would be a disadvantage this projector is placed in a corner of the room on the lantern cupboard and a portable screen is placed between the projector and the class. A paper screen will serve, but a specially prepared screen, such as the 'Luminex Daylight Screen'

manufactured by the Spencer Lens Co., Buffalo, U. S. A.,[1] is much more effective. To project pictures in which lateral inversion is no disadvantage the best method is to place the projector on a stand 6 feet from the blackboard and to tilt it upward so that the beam is thrown above the blackboard on to a screen tilted slightly downwards to receive the beam normally. The screen in this case is made of whitened cloth, 3 feet $\times$ 3 feet, stretched tight in a wooden frame.

The observatory, in which observations of the weather are made, is situated out of doors and may be considered an adjunct of the geography room. It is a small plot enclosed by a railing and contains a rain-gauge and a Stevenson screen. The Stevenson screen is a box raised 4 feet above the ground and constructed so as to admit air freely but to keep out rain and the direct rays of the sun. It contains the maximum and minimum thermometer and the wet and dry bulb thermometer. The barometer is kept in the science laboratory, and the wind-vane on top of the college building. Each day the students in their turn take the usual observations of the weather and these are posted on the Weather Report board together with the Daily Weather Map published by the Meteorological Department.

[1] Agents : The Scientific Instrument Co. Ltd., Allahabad.

IX

INDIVIDUAL WORK

LECTURING as a method of teaching is quite out of place in a school, however suitable it may be in a university. Even in universities the minds of students have been known to wander away from the subject of the lecture long before the lecture period is over. Recognizing the ineffectiveness of lecturing, all school teachers, except the inexperienced and the unintelligent, enliven their oral teaching with questions, in order to keep the minds of their pupils alert, and with blackboard summaries and illustrations in order to appeal to the pupils' interest through the sense of sight. Even so, the results of oral class teaching are often very unsatisfactory and the pupils seem rapidly to forget a great deal of what the teacher has taken the trouble to teach. Vivid descriptions, especially if accompanied by pictures, will make some impression on pupils' minds, but too much reliance on 'descriptive geography' leaves the pupils' minds in a very confused and hazy state.

The question arises how far oral class teaching is satisfactory and whether it should not be replaced, at any rate to a great extent, by some-

thing better. Supporters of the Dalton Plan give a very emphatic answer to that question. They think that oral class teaching should be reduced to a minimum and that the bulk of the work should be done by the pupils themselves with the aid of books and apparatus answering questions set and doing work assigned by the teacher. The knowledge gained by a pupil in actively searching out something for himself is, they claim, far more firmly implanted in him than the knowledge gained by listening passively to a teacher. The importance of individual work is generally recognized in mathematics and science and in these subjects pupils do individual work by solving problems for themselves and performing experiments. More individual work in geography also than is usually done seems very desirable.

Homework is excellent, because pupils have to do this for themselves ; that is, unless some kind, but misguided, friend helps them, or an unwise parent employs a private tutor to do it for them. Homework should be regularly set and regularly exacted. Trite excuses such as 'I left my book at home' and 'I was not feeling well yesterday' should never be accepted. Homework not produced at the right time should be produced on the next day with an added penalty. In setting homework it is desirable to be very definite, so that no pupil may have any doubt about what is

required. Drawing maps to illustrate particular topics is a useful exercise for homework.

No one, not even the most enthusiastic supporter of the Dalton Plan, wishes to do away with oral class teaching altogether. The problem is how much time to devote to oral class teaching and how much to individual work by the pupils. In view of its greater value it seems desirable that the greater part of the available time should be devoted to individual work. To allot all school time to oral and all homework time to individual work is to ignore the relative values of the two kinds of work. In addition to homework time some school time also should be devoted to individual work. It is probably not too much to say that, when the subject matter is fairly easy, 50 per cent of the school time available for geography should be devoted to individual work and 50 per cent to oral class teaching.

Thus, if two periods are devoted to the East Coast Strip of peninsular India, one period may be devoted to individual work and the other to oral class teaching. In the first period questions may be set to be answered in writing with the aid of the textbook and atlas. The questions should be carefully chosen so as to necessitate intelligent reference to the textbook and atlas and should require short answers that can be easily corrected. If possible, the questions should be cyclostyled to

avoid waste of time in dictating questions or writing them on the blackboard. In the second period the teacher may supplement the first lesson by means of oral descriptions, pictures, questions etc., and may deal with such items as have not been covered in the first lesson. Some examples of assignments for individual work are given below. The portion of the textbook referred to may be read as homework before the class period.

I. PENINSULAR INDIA : EAST COAST STRIP

(Refer to Stamp, *The World,* pages 291-294)

1. What is the annual rainfall in this region ? In what months is the rainfall heaviest (*a*) in the Carnatic region, (*b*) in the Northern Circars ?

2. What important irrigation works are there in this region ?

3. A railway has been built from Raipur, Central Provinces, to a port on the East Coast where a harbour is being constructed. Name this port. Has Madras a natural or an artificial harbour ?

4. What are the chief crops in this region ?

5. Draw a map of the East Coast Strip, shading the highlands and showing the deltas of the Godaveri, Kistna and Cauveri and the towns

of Madura, Trichinopoly, Madras, Tuticorin and Pondicherry.

II. CEYLON

(Refer to Stamp, *The World,* pages 332-336)

1. State the area and population of Ceylon.
2. Draw a map of Ceylon shading the land over 1,000 feet. Insert Colombo, Kandy, Nuwara Eliya, Trincomalee and Talaimannar.
3. Give the following figures for Colombo :— distance from the equator in degrees ; mean temperature for January ; mean temperature for May ; the annual and daily range of temperature.
4. Does Ceylon receive its rainfall from the south-west or the north-east monsoon ? Why does the northern part receive less rainfall than the other parts ?
5. Divide Ceylon into three natural regions.

III. BURMA (2 periods)

(Refer to Stamp, *The World,* pages 313-332)

1. Draw a map of Burma inserting the Arakan Yomas, the Shan Plateau, the Pegu Yomas, the rivers Irrawaddy, Chindwin, Salween, Sittang.
2. Which of the rivers of Burma are navigable and how far ?
3. In what parts is teak found ?

4. What is the population of Burma? What is the religion of the Burmese? Where do the Chins, Karens and Kachins live?

5. Draw a map showing the seven natural regions of Burma.

6. What is the rainfall in the Arakan and Tenasserim coastal strips? What is the chief town in each of these regions? Where is tin found?

7. In what region is the hill station of Maymyo? On what railway line is it? Where are the silver and lead mines and where is the ore smelted?

8. State the rainfall, the chief town and the most important industry of the dry zone.

9. Which is the most densely populated and most intensively cultivated region? What is the chief crop in this region?

10. Draw a map showing the importance of the position of Rangoon and the railways to Prome and to Mandalay.

11. What are the three chief exports of Burma? How are they brought to the coast?

IV. ITALY

(Refer to Pickles, *India, World and Empire,* pages 226-228)

1. Draw a map of Italy and Sicily, shading the Alps and the Apennines and showing the

rivers Po, Tiber, Arno. Insert Rome, Genoa, Turin, Milan, Venice.

2. In what respects can you compare the Plain of Lombardy with the plain of the river Ganges ?

3. What are the chief agricultural products of Italy ?

4. In what part of Italy are large factories situated ? What are the chief manufactures of Turin, Milan, Como ? As Italy has little coal, how does she obtain power for her factories ?

5. Where is sulphur found ?

6. Name the chief Alpine passes and tunnels and the towns that guard them.

7. Venice and Genoa were very important ports in the Middle Ages. What discovery led to their decline ?

X

ORAL LESSONS

In the last chapter emphasis was laid on the necessity for individual work by pupils and the devotion of whole periods to individual work was recommended. Even in oral lessons the teacher should constantly endeavour to make the pupils participate actively in the work. He should frequently ask questions to induce them to make intelligent inferences from the facts presented and to ascertain facts for themselves by studying maps, diagrams and statistics. Individual work in the form of homework is an important adjunct of oral teaching and should never be neglected.

The chief aims of the teacher in giving oral lessons should be to stimulate the interest of the pupils and to guide their work. Much has been said in previous chapters about methods appropriate to oral teaching and only a brief survey will be attempted here. In presenting the matter to be taught the teacher should bear in mind, and use where appropriate, the regional method and the comparative method. The logical order of topics he may employ or vary to suit the subject matter, or he may employ the psychological order. Important events of recent occurrence in different

parts of the world may be referred to by the teacher in order to add interest to his lessons. For this purpose, and also in order to avoid giving obsolete information, the teacher should be a constant reader of newspapers, especially of the foreign news.

Vivid descriptions of places and peoples are quite appropriate in oral lessons; but these descriptions should not be too long, otherwise the interest of the pupils is likely to flag. To obtain material for his descriptions the teacher will have to read widely outside the textbook. Books of travel and magazine articles often provide material, and textbooks intended for English schools will be found helpful, especially those dealing more particularly with human geography.

Visual instruction is essential as an accompaniment of oral instruction. Oral descriptions are made ten times more interesting to the pupils if accompanied by a display of pictures, especially those projected on to a screen by a lantern or projector. Maps are, of course, essential and the appropriate maps should always be displayed and used in teaching. The blackboard, too, should be constantly used for drawing sketch maps and diagrams and for writing a summary as the lesson proceeds.

Constant revision is necessary. Oral instruction cannot be relied on as thorough and complete

in itself. Pupils quickly forget what they hear. It is a good plan to devote the first five or ten minutes of a lesson to revising the work done in the previous lesson. Revision may be by means of oral questions and answers, but this is not very satisfactory, because only a few pupils can be tested in the time available. To test all the pupils it is best to ask questions orally and to make all pupils write down the answers on slips of paper. Three or four questions each of which can be answered in a few words are generally sufficient to find out which pupils have mastered the previous lesson and which pupils have not. Failure to write correct answers should be investigated and, if found due to idleness, suitably punished.

Notes of four lessons on the geography of south-east Asia are given below to illustrate some of the points mentioned. The portions in italics represent the blackboard summary.

FIRST LESSON

Name the three peninsulas of southern Asia. You have already studied India in Class IX. We shall now study the peninsula of Indo-China. But the peninsula of Indo-China includes one country that you have already studied. Which ? Burma. We shall therefore study

THE PENINSULA OF INDO-CHINA
EXCLUDING BURMA

Position. Look at the map. Between what well-known lines of latitude does the peninsula of Indo-China lie ? *0°–23½°N.*

Relief. Can you describe the mountain systems ? *The northern mountains; the eastern mountains running down to the Mts of Annam ; the western mountains running down to the centre of Malaya.* The highest of these mountains are about 7000 feet high. Can you name any important river valleys ? The valleys of *R. Mekong, R. Menam, Red River.*

Climate. What kind of climate has Ceylon ? Equatorial. What do you understand by ' equatorial climate '? What part of the Indo-China peninsula corresponds in position to Ceylon ? Malaya. What kind of climate has Malaya ? The rest of the Indo-China peninsula corresponds in position roughly to India. What kind of climate has India ? Monsoon. What kind of climate has the Indo-China peninsula, excluding Malaya ? *The climate of Malaya is equatorial. The climate of the rest of the Indo-China peninsula is monsoon.*

From which monsoon, S.W. or N.E., does Malaya get rain ? Both. From which monsoon does the rest of the Indo-China peninsula get rain ? S.W. Which part of India gets rain from the N.E. monsoon ? The Madras coast. One part of the Indo-China peninsula also gets rain from the N.E. monsoon. Which ? The Annam coast. In what months ? October—December.

Malaya gets rain from both monsoons. The rest of the Indo-China peninsula gets rain from the S.W. monsoon except the Annam coast which gets rain from the N.E. monsoon.

Political Divisions. What different countries are there in the Indo-China peninsula, apart from Burma ? *Siam, French Indo-China, Malaya.* We shall study each of these separately.

SIAM

Size. About 2 lakhs sq. miles (twice C.P. and Berar).

Population. About one crore (two-thirds C.P. and Berar).

The relief and climate have already been studied. In what parts are the mountains? Which is the great river of Siam? Can you divide Siam into natural regions?

Natural Regions.

(1) *The northern mountainous region; forests; teak* (floated down rivers).

(2) *The southern mountainous region; tin.*

(3) *The valley and delta of the R. Menam; rice; well populated.*

(4) *The eastern plain; poor rainfall; few people. Chief town and port—Bangkok* (500,000); 40 miles up R. Menam.

Chief Exports. Rice and teak.

Railways. From Bangkok south to Singapore and north to the forested region.

People. Siamese, like Burmese: Buddhists. Some Chinese.

Government. Kingdom.

FRENCH INDO-CHINA

Size. 2¼ lakhs sq. miles. Population, 2 crores. Relief and climate have already been studied. Which are the chief mountains? Which are the chief rivers? Into what natural regions can you divide French Indo-China?

Natural Regions.

(1) *The valley and delta of the R. Mekong; Cochin China and Cambodia; Saigon; rice.*

(2) *The mountains of Annam ; forested ; inaccessible.*

(3) *The valley and delta of the Red River ; Tongking ; Hanoi ; rice, coal.*

Government. Cochin China a French colony ; Cambodia, Annam and Tongking are under French protection.

Homework. Draw a map of the peninsula of Indo-China showing the mountains, the rivers Menam, Mekong and Red River, Bangkok, Saigon, Hanoi, Penang and Singapore.

SECOND LESSON

Examine homework.

Ask the following revision questions to be answered in writing on slips of paper.

(1) Between what lines of latitude does the Indo-China peninsula lie ?

(2) What are the two chief exports of Siam ?

(3) What are the three natural regions of French Indo-China ?

(4) What kind of climate has Malaya ?

MALAYA

Position. Between what lines of latitude does Malaya lie ? *0°-7°N.*

Relief. Study the map in Stamp, *The World,* page 346.

Mountains in the centre, plains in the west and east.

Climate, equatorial. Let us examine more closely what is meant by ' equatorial climate ' by considering the

figures for temperature and rainfall at Singapore. They are as follows :—

	Jan.	Feb.	Mar.	April	May	June
Temp.	78°	79°	80°	81°	82°	81°
Rain	8½″	6″	6½″	7″	7¼″	6¾″

	July	Aug.	Sept.	Oct.	Nov.	Dec.
Temp.	81°	81°	80°	80°	79°	79°
Rain	8¾″	8½″	7″	8¼″	10″	10½″

Mean temperature of coldest month (January) 78° ; of warmest month (May) 82°.

What is the annual range of temperature ? 4°.

The annual rainfall is 93″ and it rains in every month of the year.

Compare the annual range of temperature with that of Jubbulpore, which is 30°.

Compare the rainfall with that of Jubbulpore, which is 56″.

The mean temperature in September of Jubbulpore is 79° and the rainfall 8.3″.

The climate of Singapore for every month of the year is rather like that of Jubbulpore in September.

Natural Vegetation. In a climate which is hot and wet throughout the year what natural vegetation do you expect ? *Dense, evergreen forest.* 'The only paths are the rivers.' The villages and cultivation of the Malays are chiefly along the coast and banks of rivers.

But the forest has been cleared now in many parts. Why ? To grow rubber.

Chief products. Rubber ; about half world output. Tin ; about one-third world output.

Story of rubber, wild rubber, demand for motor and cycle tyres, how rubber trees were brought to Malaya.

Wide use of tin. Wealth of Malaya depends chiefly on these two products.

People. Malays, Chinese (in majority), Indians, few Europeans. Chinese and Indians come to the country on account of rubber and tin.

Political Divisions. (1) *Straits Settlements,* colony; *Singapore and Penang,* islands and small stretches of mainland. (2) *Federated Malay States*; native rulers and British residents; capital; *Kuala Lumpur.* (3) *Unfederated Malay States.*

Illustrations. Show pictures with the projector (15-20 minutes).

Homework. Draw a map to illustrate the importance of the position of Singapore.

THIRD LESSON

Comment on revision slips of previous lesson. Ask the following revision questions to be answered in writing on slips of paper.

(1) What are the two chief products of Malaya ?

(2) Write down the mean temperature for January and May for Singapore and the annual rainfall.

(3) What is the natural vegetation of Malaya ?

Examine homework.

Show the importance of the *position of Singapore.*

(1) *Convergence of sea routes from (a) Europe and India,* (b) *China and Japan,* (c) *Australia.*

(2) *Good harbour.*

(3) *Convenient base for the navy to protect the British Empire in the east.*

(4) *Convenient port for collecting products of Malaya and East Indies for export and for distributing imports.*

THE EAST INDIES

Comment on name, cf. 'East India' Company; West Indies discovered by Columbus in 1492. Europeans came for spices (the Spice Islands).

Look at the map in Stamp, *The World,* page 350. The Philippine Islands (U.S.A.) we shall deal with later.

East New Guinea (British—under Australian Government), dense forests, undeveloped, natives few and backward.

N. Borneo (British). British North Borneo Coy., Sultan of Brunei, Rajah of Sarawak; oil.

E. Timor (Portuguese).

Remaining islands belong to the Dutch. Most important is Java.

JAVA

Java: area 50,000 sq. m., population 37,000,000.

Rest of Dutch East Indies: area 683,000 sq. m., population 14,500,000.

For pictures of volcanoes in Java, see Stamp, *The World,* pages 102, 104, 113 and for rice fields page 149.

Reasons for importance of Java:—

(1) *Rich volcanic soil;* volcanoes along centre of island.

(2) *Industrious population; Hindu strain;* old Hindu temples.

(3) *Careful development by Dutch Government.*

Position. South of equator.

Climate, equatorial; N.W. and S.E. monsoons.

Draw a map of Java on blackboard; notice Madura island.

Natural Regions.

(1) *Alluvial coastal plain in north; rice, sugar.*

For sugar production see diagram in Stamp, *The World,* page 156.

(2) *Mountains and high plains in centre and south; volcanoes, rice, tea, coffee, rubber, cinchona.*

Story of discovery of quinine as medicine. In what parts of India is cinchona grown ?

Mineral products : oil.

Chief towns and ports; Batavia, Sourabaya.

Homework. Draw a map of the East Indies showing which parts belong to the Dutch.

FOURTH LESSON

Comment on revision slips of previous lesson. Ask the following revision questions to be answered in writing on slips of paper.

(1) Give three reasons for the importance of Java.

(2) What are the chief products of Java ?

Examine homework.

THE REST OF THE DUTCH EAST INDIES

What is the population of Java ?

What is the population of the rest of the Dutch East Indies ?

Apart from Java, the other islands of the Dutch East Indies are not very important. We shall deal with them briefly.

The chief islands are the following :—

Sumatra : population 6 millions; rubber, oil, tea.

Borneo : oil.

Celebes : copra.

THE PHILIPPINES

Position. 5°-20°*N.*, outside equatorial belt; about 7,000 islands.

Climate. Monsoon.

Area. 1 lakh sq. miles. Population. 1 crore.

Crops. Rice, coconut, Manilla hemp (for ropes), sugarcane, tobacco.

Chief town and port ; Manilla.

Politically a dependency of U.S.A.

CHINA

You have perhaps seen some Chinese traders in Jubbulpore going round from house to house selling silk and other goods. Who has seen one ? Or you may have seen the Chinese bootmakers in the Sudder Bazaar. How can you describe the appearance of a Chinese man ? Broad, flat face, narrow eyes, slanting eyebrows, straight hair, yellowish skin ; usually wearing loose trousers and short coat.

Look at the map of Asia. Before 1912 the Chinese Empire was ruled by an Emperor whose capital was at Peking (Peiping). He ruled not only China itself, but Manchuria, Mongolia, Tibet and Chinese Turkestan. China proper extends up to the Great Wall. Where is the Great Wall ? Why was the Great Wall built ? No Himalayas in north of China to keep off invaders.

In 1912 the Emperor was driven out and a Republic was set up. What is a Republic ? The capital of the Republic was first at Canton and then moved to Nanking. (In Stamp, *The World,* p. 352, alter Peking to Nanking.) Since 1912 there have been constant civil wars, one governor or general fighting against another. Millions of Chinese have died as a result of these wars and also at the hands of bands of robbers who have roamed over the country and also from famines and floods for which the Government of the Republic has been unable to organize any proper relief. Only a few years ago disastrous floods occurred in the Yangtse valley and millions of Chinese lost all their property.

In China itself the control of the Government is weak and outside China proper, in the outer provinces, it is practically nil. We shall therefore study China proper first and the outer provinces later.

Show pictures of China on the screen (15 min.).

Homework.

(1) Look at your map of Asia and compare China and India in size.

(2) What can you say about the climate of China from the following figures ?

	Jan. Temp.	July Temp.	Annual Rainfall
Canton	55°	83°	65″
Hankow	39°	84°	43″
Peking	23°	79°	25″

APPENDIX

Some useful books on Geography

TEXT BOOKS

Junior

		s.	d.
Kingsway Social Geographies	Edited by E. Young (Evans) each	1	9
1. Hunters & Fishers			
2. Herders			
3. Cultivators			
4. Miners and Manufacturers			
5. Traders and Carriers			
Geography—First Series	Archer and Thomas (Ginn)		
1. Six Children of Far-away Lands	Book 1	2	0
2. Eight Children from Near and Far	Book 2	2	2
3. Our Own People and Their Work	Book 3	2	4
4. The Grouping of Peoples—From Desert to City	Book 4	2	6
Golden Hind Geographies	R. Finch & G. Cons (U.L.P.)		
1. Ourselves and Other People		2	0
2. Village Peoples		2	3
3. Britain and the British		2	7
4. Man's Work in the World		2	9
		Rs.	*a.*
Junior Modern Geography	J. N. Ghosh (O.U.P.)	1	8

Senior

		s.	d.
The Peoples of the World	(Harrap)		
1. People and Homes in Many Lands	F. G. Moss	2	6
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